



Reliability Update

Assembly Budget Subcommittee No. 3 on Climate Crisis, Resources, Energy, and Transportation

Siva Gunda, Vice Chair, California Energy Commission

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Three Reliability Challenges

- **Planning Processes**

- Improve ability to account for climate change-induced weather variability
- Ensure timely and sufficient procurement across all jurisdictions
- Improve processes associated with interconnection and permitting
- Engage more closely with communities to build their needs into planning

- **Scaling Resources**

- Expand diversity of resources
 - Demand-side (e.g., more demand flexibility)
 - Supply-side (e.g., long-lead resources)

- **Extreme Events**

- Augment Strategic Reliability Reserve



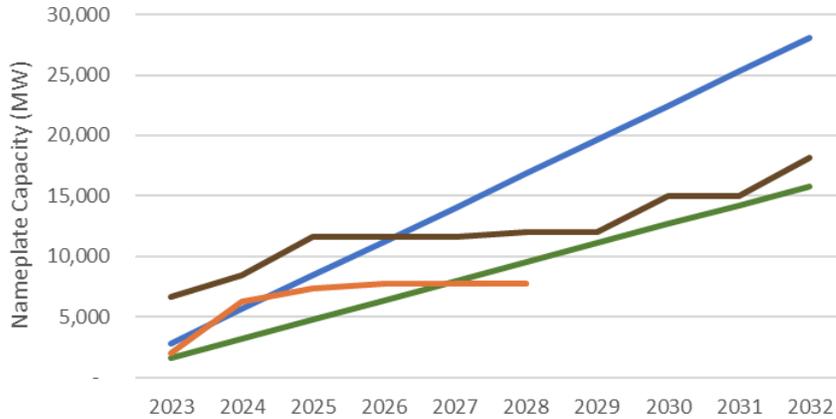
State Processes Ensure Sufficient Procurement is Authorized

- **CPUC Integrated Resource Planning authorizes procurement**
 - Unprecedented 11.5 GWs authorized in 2021
 - February decision added 4 GWs to be online by 2026/27
- **CPUC, CEC, & CAISO continually assess the reliability**
 - Preliminary analysis – 2023 & 2024 levels of procurement meet a 1-in-10 LOLE
 - Agencies continuing to improve
 - Evaluating climate impacts on demand and supply
 - Taking active steps to ensure timely and appropriate levels of procurement

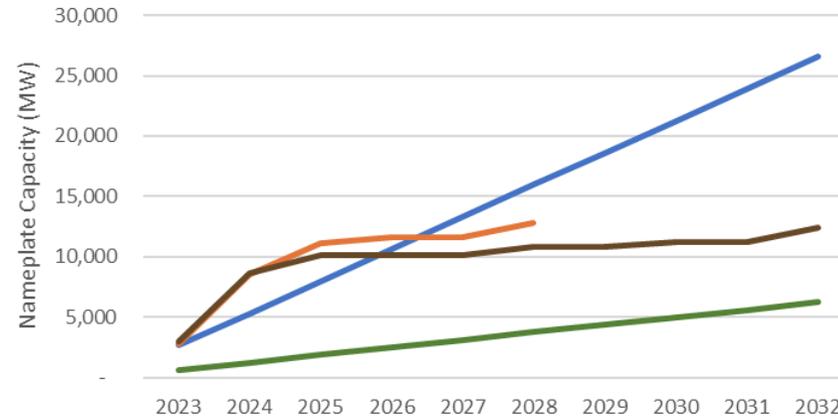


Success Requires Sustained Record Build Rates

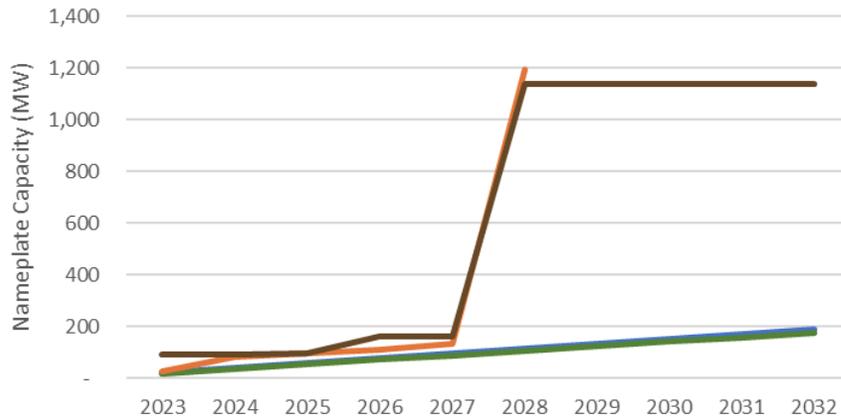
Solar Build Rates



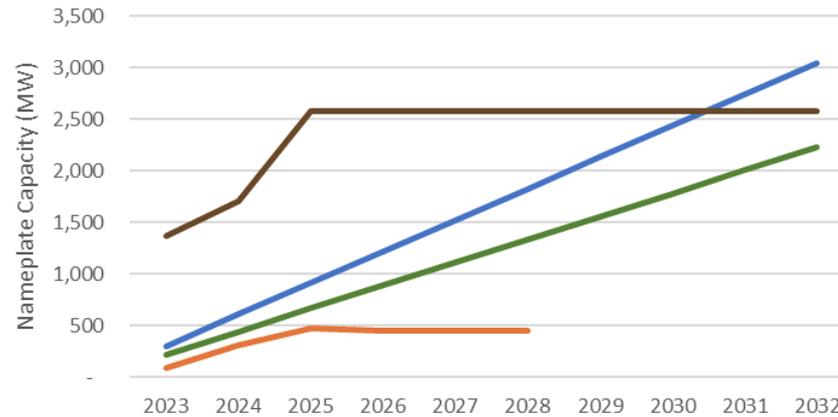
Battery Build Rates



Geothermal Build Rates



Wind Build Rates

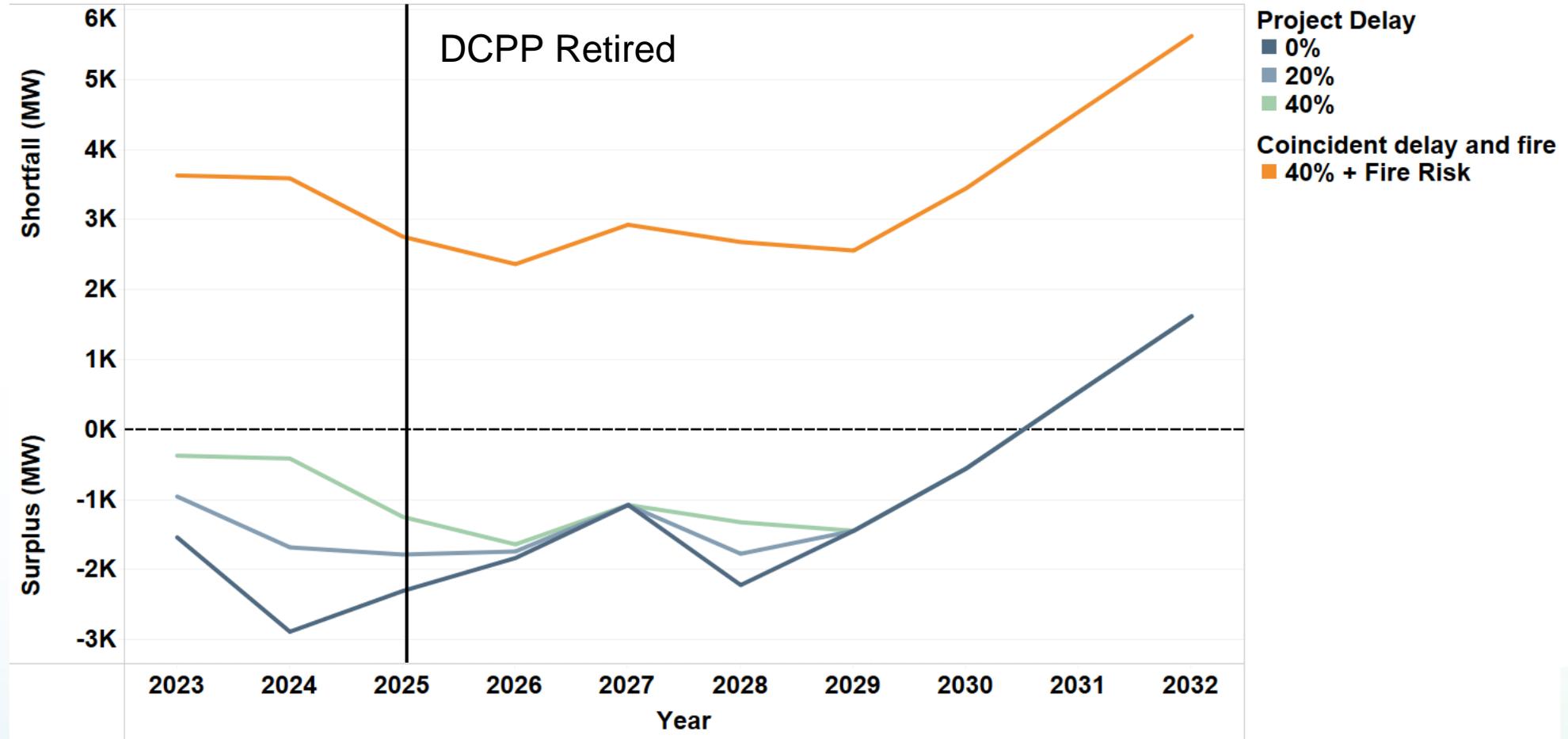


- Average build rates are generally insufficient to reach:
 - Procurement order before the end of the order
 - Preferred System Plan before 2032
- Maximum build will not exceed all builds by 2027, except geothermal

— 10 Year California Maximum
 — 10 Year California Average
 — CPUC Procurement Order
 — CPUC Preferred System Plan

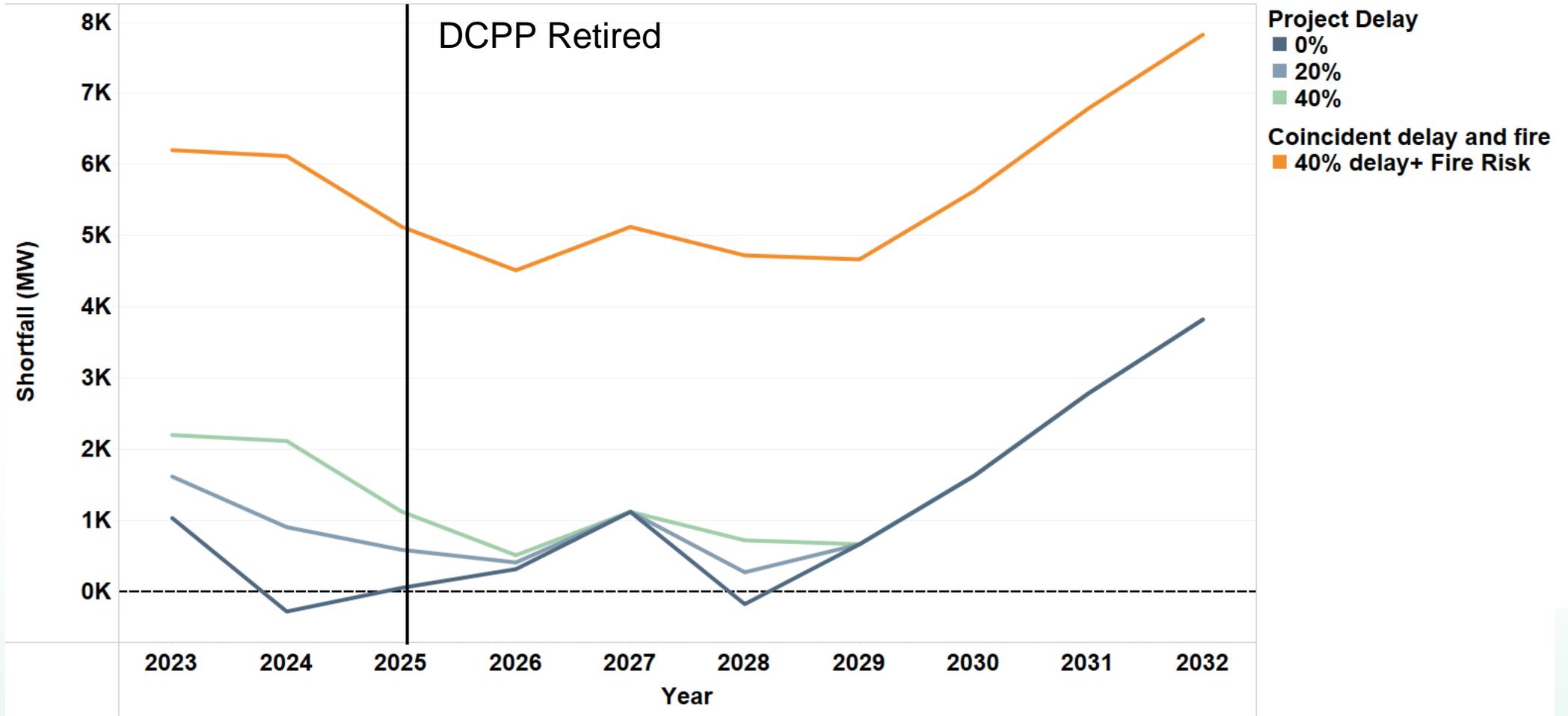


Resource Adequacy Planning Standard



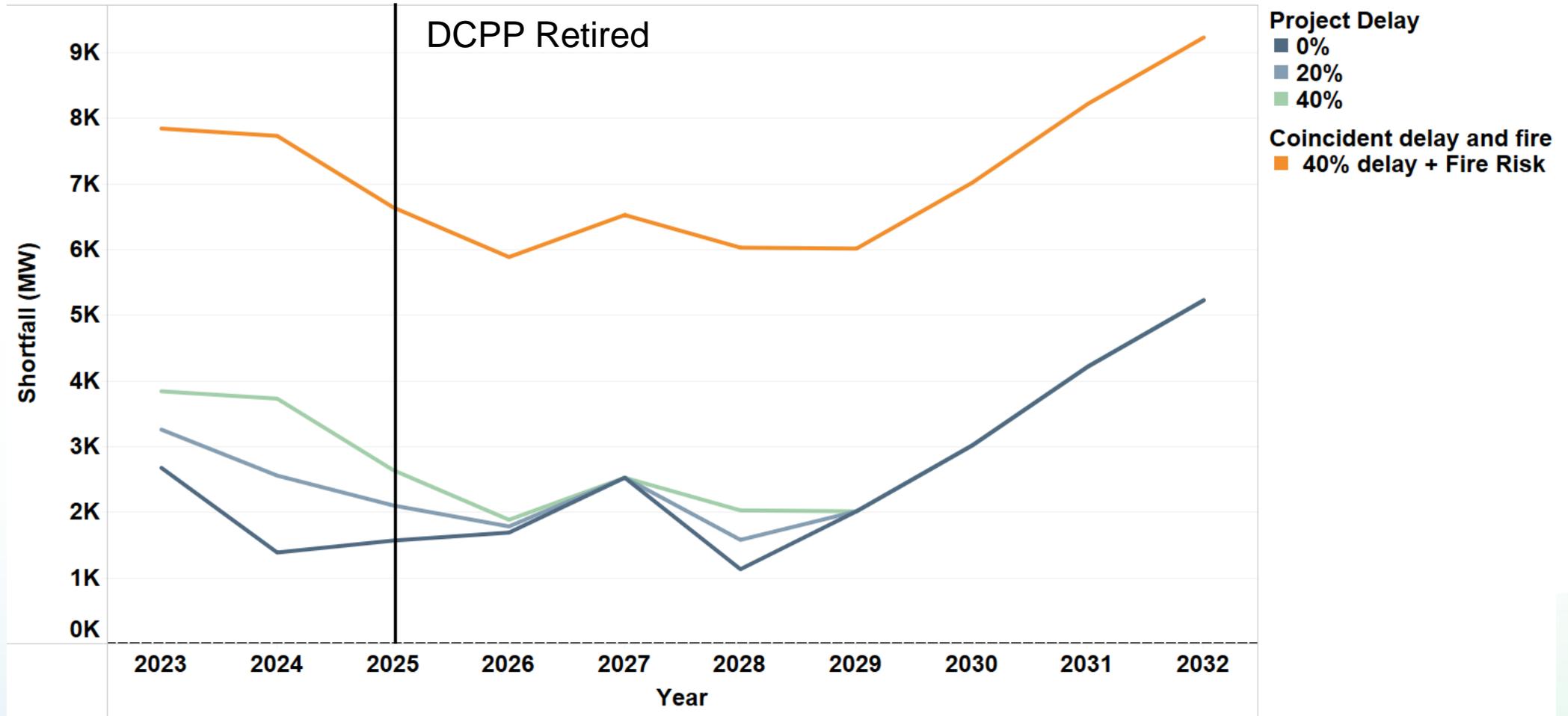


2020 Equivalent Event





2022 Equivalent Event





Strategies Being Implemented

- Tracking Energy Development Task Force
- Strategic Reliability Reserve
 - DWR
 - Electricity Supply Strategic Reliability Reserve Program
 - CEC
 - Demand Side Grid Support
 - Distributed Electricity Backup Assets
- Opt-in Permitting
- Pathway for Diablo Canyon Extension



Uncertainties Impact Reliability

- **Current authorized procurement meets planning standards in near term**
- **Uncertainties/Risks**
 - Climate change causing greater weather variability – more extreme events
 - Lack of historical data and high variability in future projections of climate impacts, availability of imports, hydro conditions etc.
 - SRR providing some protection
 - Build Rate is Unprecedented and with Risks
 - Authorized procurement requires build rates even greater than recent record build rates – authorizing more does not mean faster builds
 - Build impacted by supply chain, interconnection, permitting, and costs
 - Tightness in the RA Market – although 2023 looks good in analysis, RA showings reflect resource tightness

Questions

